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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/759,457	01/16/2004	Kwon Hong	29926/38094A	7723
4743	7590	12/02/2005	EXAMINER	
MARSHALL, GERSTEIN & BORUN LLP 233 S. WACKER DRIVE, SUITE 6300 SEARS TOWER CHICAGO, IL 60606			THOMAS, TONIAE M	
			ART UNIT	PAPER NUMBER
			2822	

DATE MAILED: 12/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/759,457

Applicant(s)

HONG, KWON

Examiner

Toniae M. Thomas

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8 is/are rejected.
- 7) ☒ Claim(s) 9-11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 10/236,311.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is responsive to the amendment filed on 08 September 2005.
2. The amendment filed on 08 September 2005 added claim 11.

Accordingly, claims 8-11 are currently pending.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 8 is rejected under 35 U.S.C. 102(b) as being anticipated by Joo (US 5,879,957).

Joo discloses a capacitor (see figs. 8A-8F and accompanying text). The capacitor comprises: a lower electrode formed on a substrate 54, wherein the lower electrode includes a metal pattern 45a made by a single material, the single material being ruthenium (Ru) (fig. 8E and col. 6, lines 3-4),¹ and a layer 47a, 50 that comprises Pt covering an upper surface and sidewalls of the metal pattern (figs. 8E, 8F; col. 6, lines 9-10; and col. 6, lines 46-49),^{2,3} and wherein

¹ The transitional term "including" is inclusive or open-ended and does not exclude additional, unrecited elements (see MPEP § 2111.03). Thus, the limitation "wherein the lower electrode includes a metal pattern" recited in claim 8 does not preclude the lower electrode structure of Joo, which includes metal pattern 45a in addition to metal oxide patterns 46a and 49 and Pt metal pattern 47a.

² Admittedly, the Pt metal pattern 47a and Pt sidewall spacers 50 are formed in separate process steps. However, in terms of structure, the Pt metal pattern and the sidewall spacers

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the metal pattern 45a is formed of a material capable of forming a conductive oxide (col. 6, lines 41-44);⁴ a dielectric layer 51 formed on the lower electrode (fig. 8F and col. 6, lines 49); and an upper electrode 52 formed on the dielectric layer (fig. 8F and col. 6, lines 49-50).

Allowable Subject Matter

4. Claims 9-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

5. Applicant's arguments filed on 08 September 2005 have been fully considered, but they are not persuasive. With respect to claim 8, the Applicant argues the following:

Neither Joo nor Hong teaches or discloses a metal pattern made by a single material and a layer comprising platinum covering an upper surface and sidewalls of the metal pattern.

On the contrary, Joo *does* disclose a metal pattern made by a single material and a layer comprising platinum that covers an upper surface and sidewalls of the metal pattern. As explained above, Joo discloses a lower

together form a single Pt layer, which covers an upper surface and sidewalls of the Ru metal pattern 45a. Therefore, Joo discloses "a layer that comprises Pt" as recited in claim 8.

³ The word "cover" means to overlay or spread with something (Webster's II New Riverside University Dictionary). Accordingly, the recitation "wherein the lower electrode includes...a layer comprising Pt covering an upper surface and sidewalls of the metal pattern..." requires only that the layer comprising Pt overlay an upper surface and sidewalls of the metal pattern. It does not require the Pt comprising layer to be in direct physical contact with the metal pattern. Hence, Joo discloses "a layer comprising Pt covering an upper surface and sidewalls of the metal pattern" as recited in claim 8.

⁴ The metal pattern 45a is formed of ruthenium (Ru), which is capable of forming ruthenium oxide.

electrode formed on a substrate, wherein the lower electrode includes a metal pattern 45a made by a single material, ruthenium, and a layer 47a, 50 that comprises Pt covering an upper surface and sidewalls of the metal pattern.

The term "including" is inclusive or open-ended and does not exclude additional, unrecited elements (see MPEP § 2111.03). Thus, even though claim 8 has been amended to recite the limitation "wherein the lower electrode includes a metal pattern " the claim still reads on the prior art structure because the claim language does not preclude a lower electrode structure wherein the lower electrode includes a metal pattern 45a in addition to metal oxide patterns 446a and 49 and metal pattern 47a.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Toniae M. Thomas whose telephone number is (571) 272-1846. The examiner can normally be reached on Monday through Friday from 8:30 a.m. to 5:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zandra Smith can be reached on (571) 272-2429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TMT

08 November 2005



Mary Wilczewski
Primary Examiner